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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/722,482	11/28/2000	Soren G. Thomsen	P/772-274	5382

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EXAMINER

LANGEL, WAYNE A

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 07/28/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

722482

Applicant(s)

Thomson

Examiner

Langel

Group Art Unit

1754

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☐ Responsive to communication(s) filed on _____
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-6 is/are pending in the application.
- ☐ Of the above claim(s) 4-6 is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-3 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☒ Claim(s) 1-6 are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☐ All ☐ Some* ☐ None of the:
 - ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

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Restriction to one of the following inventions is required under 35 U.S.C. § 121:

I. Claims 1-3, drawn to a process for carrying out a non-adiabatic reaction, classified in Class 423, subclass 650.

II. Claims 4-6, drawn to a non-adiabatic reaction system, classified in Class 422, subclass 188.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used to practice another materially different process, such as a process for carrying out an adiabatic reaction.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classifications, restriction for examination purposes as indicated is proper.

During a telephone conversation with Stephen Soffen on June 18, 2003 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-3. Affirmation of

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this election must be made by applicant in replying to this Office action. Claims 4-6 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claims 1-3 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, line 4, "first reactions space" is indefinite. The word "reactions" should be changed to --reaction-- to avoid this rejection. Also in claim 1, there is no clear antecedent basis for "steam reformed product gas", since lines 3-5 of claim 1 do not require that the reactants be those which would result in a steam reformed product gas (i.e., steam and a hydrocarbon). In claim 3, there is no clear antecedent basis for "the product gas".

Cox is made of record for disclosing a process wherein an effluent is withdrawn from an adiabatic reaction zone and is passed through a catalytic non-adiabatic reaction zone, the effluent being heated, by indirect heat transfer, during passage therethrough to effect a temperature rise through the non-adiabatic reaction zone at least about equal to the temperature decrease through the adiabatic reaction zone.

Ohsaki et al. is made of record for disclosing a reactor comprising a vertically extending, angular, intercylinder space,

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defined between a cylindrical outer catalyst retainer and a cylinder inner catalyst retainer, divided by radially extending vertical partition walls in to a plurality of chambers. Heat-exchanging tubes are disposed vertically in at least one of the chambers. A granular catalyst is packed in at least two of the chambers to form at least two reaction chambers, and a feed gas is caused to flow successively and in radial directions through these reaction chambers.

The other references are made of record for disclosing processes for the production of hydrogen by catalytic steam reforming of a hydrocarbon feedstock, wherein the feedstock is autothermally steam reformed and the product effluent is used to provide heat for a steam reforming process by indirect heat transfer.

This application apparently discloses allowable subject matter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wayne A. Langel whose telephone number is (703) 308-0248. The examiner can normally be reached on Monday through Friday from 8 A.M. to 3:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can

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be reached on (703) 308-3837. The fax phone number for this Group is (703) 305-7718.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-2351.

WAL:cdc

July 23, 2003

Wayne A. Langel
WAYNE A. LANGEL
PRIMARY EXAMINER